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ABSTRACT OF THE DISCLOSURE

A method for achieving a high-resolution 3D reconstruction of a crystal, includes, vitrifying a sample of microcrystals for cryoTEM, recording a tilt series, and obtaining a first 3D reconstruction using the FB+COMET procedure. If the sample is of high quality, the repetitive structure and, if possible, the space group of the crystal are determined. If the space group could be determined, a second 3D reconstruction may be obtained including information about the space group.